



Was Sir William Crookes epistemically virtuous?

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ABSTRACT

The aim of this paper is to use Sir William Crookes' researches into psychical phenomena as a sustained case study of the role of epistemic virtues within scientific enquiry. Despite growing interest in virtues in science, there are few integrated historical and philosophical studies, and even fewer studies focussing on controversial or 'fringe' sciences where, one might suppose, certain epistemic virtues (like open-mindedness and tolerance) may be subjected to sterner tests. Using the virtue of epistemic courage as my focus, it emerges that Crookes' psychical researches were indeed epistemically courageous, but that this judgment must be grounded in sensitivity to the motivational complexity and context-sensitivity of the exercise of epistemic virtues. The paper then considers Crookes' remarks on the relationship between epistemic virtuousness and the intellectual integrity and public duties of scientists, thereby placing epistemic virtues in the context of wider debates about the authority of science in late modern societies. I conclude that Crookes' researches into psychical phenomena offer instructive lessons for historians of science and virtue epistemologists concerning the complexity and contextuality of epistemic virtues, and the profitable forms that future studies of virtues in science could take.

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1. Introduction

The last twenty years has seen a growing interest in the role of epistemic virtues in scientific enquiry from two distinct constituencies. The first is the history of science, several of whose distinguished practitioners have begun to explore the ways in which foundational epistemic concepts, like objectivity, can be understood in terms of changing conceptions of 'the scientific self', images of the idealized enquirer grounded in distinctive sets of virtues.¹ Another good example is the efforts, by Steven Shapin, to identify the different 'personae' that natural philosophers—and, later, scientists—have operated with: the humble Godly Naturalist, say, or the diligent Civil Expert. Each reflects a different possible form that the 'scientific life' can take, hence Shapin's description of his project as a 'moral history'.² But though these historical and sociological studies have provided us with contextually rich

accounts of these changing conceptions of the characters and contexts of scientific enquiry, they tend not to provide the carefully articulated accounts of the structure and psychology of the virtues in questions that one might rightly expect the philosophers to demand.

The second constituency interested in epistemic virtues in science is the flourishing community of virtue epistemologists.³ It is their ambition to provide sophisticated accounts of the ontology and psychology of the epistemic virtues, and to describe their various roles in our epistemic activities. Since the sciences represent some of the most sophisticated and cognitively and culturally authoritative forms of epistemic activities in late modern societies, it is unsurprising that virtue epistemologists tend to turn to those sciences for illustration and inspiration, reflecting the conviction that a focus on 'ordinary practitioners of science' can teach us much about epistemic virtue and vice (Roberts & Wood, 2007, p. 8). But although these virtue epistemologists do provide the sophisticated accounts of the ontology and psychology of the epistemic virtues,

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¹ See Daston & Galison (2007).

² See Shapin (2008a, 2008b).

³ See, for instance, Roberts & Wood (2007) and Baehr (2011).

their case studies—which have included Jane Goodall's ethology and the discovery of the structure of DNA—might not satisfy the demands of historians for fine-grained contextual detail.⁴

It is clear that both historians of science and virtue epistemologists share a common interest in virtues in science, but that the results of their enquiries are, taken independently, incomplete in certain respects. The historians offer detailed accounts of the history and contexts of the virtues' development, whereas the epistemologists offer careful accounts of their ontology and psychology. That being so, the members of those two currently isolated constituencies ought to cooperate to provide 'integrated' historical and philosophical accounts of epistemic virtues in scientific enquiry. With that context in place, the aim of this paper is to address two related questions. The first is that of whether Sir William Crookes epistemically virtuous—in a sense to be outlined later in the paper—and the second is the broader question of what a case study of Crookes' virtues might teach us about studying epistemic virtues in science.

2. Why Crookes and why 'spooks'?

The focus on Crookes is justified on three grounds. The first is that Crookes is an eminent figure in the history of psychical research, in honour of his distinguished investigations into spiritualistic and psychical phenomena during the early 1870s.⁵ The second is that there are certain features of Crookes' character and social and professional situation that (as I argue in later sections) are especially relevant to our understanding of the contextuality and complexity of epistemic virtues. The third is that Crookes makes explicit remarks on epistemic virtues—as we would dub them—in relation to the intellectual integrity and public duties of scientists. Although these three points are hardly unique to Crookes, they do mark him out as a very apt subject, and the question of how other psychical researchers might fare on a virtue-epistemic analysis can be left for another time.

The focus on psychical research is justified on two grounds. The first is that most virtue epistemological appeal to the history of science has focused on what one might call *conventional* rather than *controversial* science.⁶ Most virtue epistemologists tend to turn to established and orthodox sciences—like physics and biology—rather than to those nascent, heterodox sciences like psychical research; although understandable, the neglect of controversial sciences arguably deprives us of important insights into the range and role of the epistemic virtues. The virtues of epistemic courage and epistemic humility, say, may be subjected to sterner tests when exercised in epistemic contexts marked by contestation and controversy, like mid-Victorian British psychical research. The second reason to consider 'psychics' is the more general point that the psychical researchers tended to talk a lot about epistemic virtue (though not, of course, in those terms). To offer just one example, W. F. Prince, author of *The Enchanted Boundary*—subtitled 'a survey of negative reactions to claims of psychic phenomena'—often discusses the 'qualities' that 'define an astute psychic researcher': these include a 'fair and open-minded spirit' and an 'impartial scientific curiosity', to be contrasted with the 'dogmatism and prejudice' of their reactionary critics (Prince,

1930, pp. 32 and 62). The general idea is that the demands placed upon epistemic virtues depend upon the contexts in which they are exercised, and that the contested and heterodox status of late Victorian psychical research provides illustrative cases of this phenomenon.

Crookes' researches into psychical phenomena therefore offer a promising candidate for an integrated study of the role of epistemic virtues in scientific enquiry. The first task is, therefore, to ask which virtues Crookes might have had.

3. Crookes' virtues

There are many epistemic virtues. Even a short list of typical examples would include curiosity, impartiality, open-mindedness, epistemic justice, epistemic humility, and epistemic courage, to name just a few.⁷ That list is, of course, subject to vigorous debate, and a central task of contemporary virtue epistemology is to identify and individuate the virtues, and to provide a developed taxonomy of them.

Rather than treat of many virtues in brief detail, my focus will be on the virtue of *epistemic courage*. There are three reasons for choosing that virtue. First, Crookes was very often praised for his 'moral courage', for his having 'dared to occupy himself publicly' with a topic—that of spiritualistic and psychical phenomena—that 'only aroused contempt and derision' (Joire, 1916, p. 368). As one biographer puts it, Crookes was admirably indifferent to the question of whether he 'improved or injured his scientific position', since he was 'desirous only of contributing to our knowledge'—a splendid definition of epistemic courage (Rawson, 1912, p. 259). Second, Crookes testified to his own epistemic courage, in the context of identifying, from his own experience, the qualities or virtues that a scientist needs. 'To stop short in any research', he wrote, in the face of 'criticism or difficulty, or adverse criticism', is to 'bring reproach on science', implying that some degree of courage is definitive of the scientific enquirer (quoted in Rawson, 1912, p. 86). Or as Crookes declared in his presidential address to the British Association for the Advancement of Science, 'if you find something to be a fact, avow it fearlessly'—that is, courageously (Crookes, 1898, p. 438). The third reason for focussing on epistemic courage is that it is a virtue that psychical researchers often invoked as necessary—for obvious reasons—to their activities. In an obituary article, Crookes praised the neurologist George Miller Beard, a student of hypnosis, as belonging to that 'rare class of thinkers' who 'dared to utter their thoughts', while similarly the philosopher Henri Bergson reminded the members of the Society of Psychical Research, of which he was then president, of the 'courage' that they would need to confront the 'prejudices' that subject met with (quoted in Haworth, 1970, p. 3; Bergson, 1913).⁸ And as the physiologist and Nobelist Charles Richet (1850–1935) observed, psychical research demands 'much courage' because its practitioners are compelled to provide a 'defence' of their discipline, as well as to work diligently in it (Richet, 1923, p. 30).

Although these scattered remarks offer useful sketches of epistemic courage, the following discussion will focus on the sophisticated account of that virtue offered by the contemporary virtue epistemologist Jason Baehr (2011, chap. 9). There are three components of that account: epistemic courage is (first) a

⁴ Roberts & Wood (2007), for instance, offer case studies of Jane Goodall's ethological researches (pp. 145–148), Galileo's interaction with the Church (pp. 265–276), and the discovery of the structure of DNA (pp. 293–298).

⁵ See, for instance, D'Albe (1923), Brock (2008), Medhurst & Goldney (1964), and Medhurst, Goldney, & Barrington (1972).

⁶ There is a considerable philosophical literature on psychical and anomalous phenomena, and I am grateful to Andreas Sommer for showing me a detailed bibliography of relevant sources.

⁷ See, for instance, Baehr (2011, chap. 2) and Roberts & Wood (2007, p. xx).

⁸ More generally, Rhine (1947, p. 156) issued a dark warning about the 'social forces under which the explorer in parapsychology has had to work'. A classic—if neglected—study of the sociological factors that affect and constrain research into anomalous phenomena is Charles Fort's study of 'damned' phenomena (see Fort, 1919).

'disposition to persist in or with a state or course of action', which is (second) 'aimed at an epistemically good end'—like truth—and in which (third) doing so incurs a 'threat to one's own well-being' (Baehr, 2011, p. 172). That disposition includes both 'willingness' and 'ability', since a person could have the *willingness* to act courageously but be deprived, often through no fault of their own, of the *ability* to do so—a brave warrior trapped in a dungeon, say. That virtue must also be invested in a 'motivational structure' within which epistemic goods occupy an 'appropriately dominant position', such that a person who fights for the truth for hope of personal glory, say, therefore fails to be properly—that is, virtuously—courageous (Baehr, 2011, p. 179).

The actual or anticipated threat that the courageous person could face might take many forms, but it is useful to distinguish, albeit loosely, between three main forms which would apply in most cases of epistemically courageous activity. First, there are *physical harms*, such as threat of violent retribution against oneself or one's property, or the risk of 'disappearance' in the night that faced intellectuals in totalitarian societies. Second, there are *professional harms*, such as the risk of demotion and dismissal, or having to face disciplinary proceedings or formal censure by superiors, or more subtly to feel the need to watch what one says and does. Third, there are *public harms* such as ridicule or mockery, becoming a 'laughing stock' or being cruelly satirized, and other forms of what nowadays is referred to as 'reputational damage'.⁹

A further distinction should also be drawn between *personal harms*, directed towards the well-being of courageous person themselves, and *proximal harms* pertaining to their associates (such as colleagues or postgraduate students) or intimates (such as friends of family), and perhaps also to the causes and organizations the courageous person might identify with or be invested in.¹⁰ The most severe cases of epistemic courageousness would doubtless involve a combination of both physical, professional, and public harms directed both personally and proximally, pulling together in a way that amplifies the demands made of epistemic courage (see Baehr, 2011, §9.2).¹¹

Even in less threatening situations, however, epistemic courage has a diverse set of roles within scientific enquiry, owing not least to the complexity of the modern scientific enterprise. Although it is beyond the scope and need of this paper to provide a comprehensive account of the different roles that epistemic courage may be required for, a brief list might be useful. Epistemic courage can be required, for a start, for the selection and investigation of certain topics, if they are considered unorthodox or 'left-field'; or for the adoption or abandonment of beliefs, or for the decision to suspend judgment on a topic, especially in the face of an established consensus; or it can require courage simply to formally or publicly state an interest in a given topic, or to issue a call for enquiry, or to engage in public or professional debate about it; and finally it can take courage to even consider such activities in awareness of the

risks they might entail and take them seriously as possible courses of action. Each of these forms of epistemic activity can require epistemic courage, and it is a matter for careful case studies to identify which sorts of activity require what degree of epistemic courage in specific social and professional contexts.

The virtue of epistemic courage therefore consists of a disposition to engage in epistemic activities aimed at an epistemic good, even though doing so entails the risk of harm to one's own well-being or that of one's intimates, of one or another of at least three main forms.

4. Was Crookes epistemically courageous?

The foregoing account of epistemic courage offers a set of criteria by which to address the question of whether, and if so to what extent, Crookes was epistemically virtuous. Since those criteria are all necessary, all three must be fulfilled if one is to qualify as epistemically courageous in Baehr's sense.

The first question is: during his unorthodox researches, did Crookes engage in states or courses of action—practices of enquiry and processes of belief-formation, say—that might require epistemic courage? Clearly enough the answer is yes; for research into mediumship and spiritualistic phenomena was often faced by powerful and entrenched opposition from scientific, religious, and philosophical quarters. Moreover psychical research was still in its early stages, and lacked the sorts of persuasive experimental proofs and carefully articulated theoretical rationale that Victorian scientists increasingly demanded; indeed, the pursuit of such proofs and theories was a core aim of psychical research during the period and one that Crookes himself was engaged with. Moreover there were powerful scientific figures of the scientific establishment opposed to psychical research, including T. H. Huxley, for whom researches into mediumship and telepathy were no more interesting or instructive than 'listening to the chatter of old women', and the anthropologist E. B. Tylor who declared, at the time that Crookes published his main papers on the topic, that spiritualistic beliefs were a 'direct revival from the regions of savage philosophy and peasant folklore' (Huxley quoted in Luckhurst, 2002, p. 31; Tylor, 1871: i, p. 129).¹²

The second question concerns the sorts of motivations that informed Crookes' researches into psychical phenomena, and especially whether they were aimed at an epistemically good end, like truth. This is a complex question—for reasons discussed later in the paper—but it certainly seems that Crookes was, to a significant degree, motivated by epistemic goods, like truth, enquiry, and the correction of error. In remarks whose sincerity we have no reason to doubt, Crookes wrote that his 'single object of eliciting *the truth*', and he castigated critics who 'really desired ... not *the truth* but an additional witness in favour of their own foregone conclusions' (Crookes, 1871b, pp. 473–3). Those critics sacrificed the pursuit of truth in favour of the fortification of their own prejudicial convictions by choosing to resist, or at any rate refuse to engage with, the results of psychical research. Crookes reaffirms his commitment to the truth in his stirring remark that, 'For my own part, I too much value the pursuit of truth, and the discovery of any new fact in nature, to avoid enquiry because it appears to clash with prevailing opinions' (Crookes, 1871a, p. 346). The truth, argues Crookes, must be pursued as a good in itself, and enquiry must be conducted even if it clashes with 'prevailing opinions', which are after all themselves subject to abandonment and modification during the ongoing course of enquiry—which, of course, none can foresee.

⁹ See Rolph (2008). Sociologists of science have often discussed reputation and related concepts like credibility, 'capital', and trust. See, for instance, Merton (1968), Bourdieu (1988), and Shapin (1994).

¹⁰ One might wonder if it is really courageous to undertake a course of action that will result in risks to others, especially if those others are vulnerable in some relevant respect (as junior colleagues might be). Two responses might be offered: first, almost all courses of action, epistemic or otherwise, could bring the risk of harm to others, since the social nature of our lives makes that unavoidable; and second, risking harms is often necessary for the achievement of great gains and advances, such that proximal courage of this sort might be to the great advantage of those persons.

¹¹ Many dissenting Soviet intellectuals, for instance, faced the risk of kidnapping, expulsion from learned academies, forced public recantation, and exile to labour camps, as examples of what defiance of state ideology would entail (see Horvath, 2005, chap. 1).

¹² Tylor was, in fact, privately engaged in spiritualist research; see Stocking (1971).

The third question asks whether Crookes faced a threat to his well-being through his participation in psychical research. It seems that he certainly did. For by engaging in psychical research and associating himself publicly and professionally with it, Crookes' clearly 'jeopardized not only his own scientific reputation, but also ... his own personal conduct', and risked 'tarnish[ing] his ... code of honour' (Lyons, 2009, p. 91; Oppenheim, 1985, p. 338). The jeopardy and risks that Crookes courted were also amplified by the perception, amongst some of his peers, that he risked 'destabiliz[ing] the authority of science at a critical time' in the formation of a modern scientific culture (Luckhurst, 2002, p. 28). If so, then Crookes was opposed not only by certain recalcitrant peers—like Huxley and Michael Faraday—but also to growing trends within the emerging culture of scientific naturalism. Through his endorsement and pursuit of psychical and spiritualistic investigations, Crookes was perceived as threatening the 'rapid progress of the sciences' and the 'intellectual edifice on which the scientific profession based its claims for professional authority' (Noakes, 2004, p. 24).

The range of professional and public harms that Crookes suffered is well illustrated by some of the remarks made by one of his most vociferous critics, the biologist and university administrator William Benjamin Carpenter (1813–85). In a series of scathing articles in the popular periodicals of late Victorian Britain, Crookes was lambasted as being 'utterly untrustworthy' when it came to psychical phenomena, as betraying the 'cause ... of Reason and Common Sense', and as doing 'mischief ... to his own reputation and that of British science, and ... public morality' (Carpenter, 1871, p. 343, 1877a, p. 542, 1877b, p. 545).¹³ Such remarks, though very strident, indicate the degree of hostility an alarm that Crookes' researches elicited from at least some of his peers. Such alarm is also reflected in what Luckhurst calls the 'extra-scientific attempt at closure' of debate about psychical phenomena that Crookes faced, including the Royal Society's suppression of his reports on his investigations by committee, and the salacious society gossip about his relationship with the attractive young medium Florence Cook.¹⁴

The issue of whether Crookes was having a relationship with Cook is difficult, but clearly affects any claims about both his ethical and epistemic virtue. If Crookes was having an affair with a woman who was involved in his researches, this obviously compromises certain epistemic virtues—such as impartiality and objectivity—as well as increasing his vulnerability to reputational risks that a truly courageous, if not prudent, epistemic agent would assiduously avoid. The virtue of epistemic courage, after all, involves a reflective appraisal of risks, and not their needless exacerbation; that is not courage, but recklessness, to use Aristotle's terms.¹⁵ Furthermore, it is a hallmark of an epistemically virtuous agent that they take appropriate measures to ensure, as best they can, that their social environment is optimally conducive to their enquiries. After all, enquiry, of any sort, is best enabled by certain sorts of social relations, and, in Crookes' case, rumours of inappropriate conduct in darkened rooms with young women hardly count as optimal environments for the conduct or communication of enquiry. It gives, for instance, ammunition to critics, like Trevor H. Hall, who have their own axes to grind, and are happy to 'play dirty', but actually being 'dirty'—or ethically and epistemically unworthy—only plays

in their hands.¹⁶ Such 'hints and innuendoes' are, complained Crookes to Sir Oliver Lodge, 'the tax one has to pay' for doing business with disreputable subjects (quoted in Brock, 2008, p. 203). But taxes, of course, can be fair or unfair, and, in enquiry as in personal finance, wise prudence requires that one avoid needless taxes by regulating one's affairs appropriately; if Crookes failed to do so, his ethical and epistemic virtue is impaired.

The judgment that Crookes was epistemically courageous also requires a final component, namely that he anticipated and was aware of the chances of harm. Unless a person is aware of those harms, their actions are not virtuously courageous, and might even open them to the charge of recklessness, a vice. Crookes, however, clearly recognized the range of public and professional threats that his psychical researches might subject him to. For the subject was, he recognized, opposed by 'foregone conclusions', consistently confronted by an 'unscientific course of *a priori* argument', and moreover met 'not only ... incredulity, but ... not a little abuse', and reliably 'ridiculed by critics' who 'knew nothing ... of the subject', and were 'too prejudiced' to engage in impartial debate and enquiry (Crookes, 1871b, pp. 472–3, 1874, pp. 81 and 84).¹⁷ Irony and systematic denial', as the neurologist Paul Sollier drily put it, 'are not scientific demonstrations' (Sollier, 1903, pp. 1–2).¹⁸ The disposition to persist with epistemic activities despite the anticipation or actuality of threats and harms—ranging from ridicule to dogmatism to prejudice—is, of course, the hallmark of epistemic courage.

Since Crookes fulfils the three conditions that Baehr presents it seems that he can be taken to be formally epistemically courageous. For in his psychical researches he engaged in epistemic activities motivated by an epistemic good despite the anticipation and actuality of a variety of harms to his well-being. That judgment will be critically considered in the next section—for things are more complicated than they might seem—but before doing that it is worth briefly replying to the question of how one might get from the narrow claim, that Crookes was courageous, to the wider and stronger claim, gestured to in the title of this paper, that he was epistemically virtuous more generally—so not just courageous but also humble, open-minded, and so on. Even if one has no special hope that Crookes might be epistemically virtuous in this stronger sense, one might still rightfully expect some discussion of it.

There are two ways to make that stronger claim. The first would be to go through the other epistemic virtues one-by-one and see if a case could be made for Crookes having that virtue; however, though this approach would be interesting—at least for this author—it would be time-consuming and run the risk of being repetitious, given the foregoing treatment of the virtue of epistemic courage. Fortunately, the second way of making the stronger claim is both quicker and equally effective, and it invokes the idea of 'cooperative virtues'. It is a commonplace among philosophical virtue theorists that the activity of one virtue often calls into play other virtues; for instance, if being truthful will often require courage if telling the truth might open oneself up to the risk of harm or injury. It is also a commonplace that most virtues will typically require the cooperative activity of a plurality of other virtues, even if there is no algorithmic way of determining which

¹³ The reasons for Carpenter's considerable hostility to Crookes and to psychical research are complex and understudied, but they include his commitment to the 'creation of a public scientific culture' and the establishment of a 'physiological psychology', both of which he perceived Crookes' psychical researches as threatening (see Smith, 2006). See, further, the paper by Shannon Delorme (in this volume).

¹⁴ See Luckhurst (2002, pp. 24–37ff).

¹⁵ On the distinction between courage and its vices, in their ethical rather than epistemic forms, see Scarre (2010), especially chapters 3 and 5.

¹⁶ For the charge, see Hall (1962), and, for discussions, Gauld (1965) and Nicol (1966). I am very grateful to an anonymous referee for these suggestions.

¹⁷ The complaint that such critics were typically ignorant of the subject was repeated almost exactly one hundred years later by the philosopher of science Paul Feyerabend, who defended astrology by an attack—see Bok, Jerome, & Kurtz (1975)—on the grounds that 'it was attacked by scientists, Nobel Prize winners among them, without arguments, simply by a show of authority and in this respect deserved a defense' (Feyerabend, 1991, p. 165). For the defense—and some sympathetic discussions of parapsychology—see Feyerabend (1978, pp. 91–96).

¹⁸ I thank Sebastian Dieguez for the reference and the translation.

virtues are called into play in any given context; understanding the virtues is, as Aristotle wisely observed, an ‘inexact science’.

My suggestion is that Crookes’ epistemic courage typically required the cooperative activity of a plurality of other epistemic virtues. Most obviously in the virtues that motivated his enquiries into psychical phenomena (such as curiosity), the virtues required for the discharge of those enquiries (such as attentiveness and diligence), and also the virtues especially relevant to studies of novel or unusual phenomena (such as epistemic humility and open-mindedness).¹⁹ The cooperative relationships between these sorts of virtues and the virtue of epistemic courage are evident on the basis of both an abstract analysis of the psychology of the virtues and of empirical studies of virtues in practice—although the provision of such an analysis for Crookes is a matter for another, much longer paper and for another time.

5. Two morals of the story

Although Crookes therefore fulfils the formal conditions for epistemic courage—and can therefore be judged to have possessed and exercised that virtue in his psychical researches—the historical story is more complex, and offers two morals that those interested in epistemic virtues in scientific practice should draw. The first concerns the *motivational complexity* of epistemic virtue and the second concerns its *context-sensitivity*. Both of these are lessons that the virtue epistemologist can and should learn from the historian whose job it is to explore the contexts and complexity of scientific endeavour.

The first moral concerns the motivational complexity of epistemic virtue, and relates to the point, made earlier, about Crookes’ motivations for studying psychical phenomena. Although epistemic motivations, such as love of truth and desire to discover ‘new facts about nature’, surely played a role, Crookes’ historians and biographers have consistently emphasized the role of other, non-epistemic motivations—for instance, the death of his brother Philip in 1867—that indicate how the ‘emotional circumstances of his personal life’ affected both the object and the intensity of his scientific interests (Lyons, 2009, p. 104). Other non-epistemic motivations informed Crookes’ researches into psychical phenomena, including a desire to defend his integrity as an experimental scientist and his frustration with what he took as the failure of the scientific establishment to fulfil its duties to respond to topics of public interest and concern. A complex set of concerns and interests can be identified that informed Crookes’ researches, ranging from the epistemic and emotional, to the professional and practical.

Indeed, the point about motivational complexity could be generalized. Few, if any scientists are motivated by epistemic goods alone, and historical enquiry has amply disclosed the motivational complexity of scientific enquiry, and virtue epistemologists ought to incorporate that psychological and social fact into their accounts of the epistemic virtues. Alongside a love of truth, one could point to grief and injured pride and integrity, and that fact does not—at least in my judgment—impugn his epistemic courageousness. As two virtue epistemologists put it, few would ‘deny that selfish ambition’ and related ‘extrinsic intellectual goods’—like ‘fame, prestige [and] the Nobel Prize’—are all good epistemic motivators; rather, the value of the virtues is that they sustain epistemic practices (like the sharing of knowledge), guard against epistemic faults (like selfish secrecy), and create optimal conditions for collective enquiry—to take just a few plausible candidates.²⁰

A virtuous agent might be said not to *lack* non-epistemic motivations, but rather to enjoy a cultivated capacity to regulate their epistemic and non-epistemic motivations. Indeed, virtue can, at times, put vice to good work. So motivational complexity is not denied by virtue epistemology, but to identify and articulate it in any given case requires the sort of historiographically sophisticated and contextually sensitive accounts of the psychology and sociology of scientific enquiry that historians of science, with their resources and expertise, can offer. Baehr has suggested to me that Crookes counts as epistemically courageous, because all that requires is that a love of epistemic goods has an ‘appropriately dominant place’ within his ‘motivational structure’—which indeed it did.²¹ Baehr, then, happily concedes the fact of motivational complexity, while being open to the need for more complex stories to be told about what drives epistemic agents to act as they do, of the sort that this paper has offered.

The second moral concerns the fact that the ability to exercise the epistemic virtues is deeply context-sensitive. If virtues are bound to practices and contexts, as both virtue ethicists and virtue epistemologists emphasize, then a persons’ capacity to exercise and cultivate certain virtues is to some degree contingent on contextual factors.²² Indeed, as one influential writer rightly remarks, much of the impetus behind virtue epistemology lies in the conviction that epistemology will be ‘broadened and enlivened’ by a ‘closer relationship to actual epistemic practices’ (Fricker, 2009, p. vii). Concerning scientific practice, the relevant disciplines to which to turn are, of course, the history, philosophy, and sociology of science, and a good starting place would be the work of writers like Daston, Galison, Shapin, and others.

With those points in place, which features of Crookes’ life and character affected his ability and willingness—to use Baehr’s terms—to be epistemically courageous? There are at least three, all pertaining to the fact that his independent status granted him a degree of immunity to, or resilience in the face of, the harms that certain epistemic activities generate.

Crookes was, for a start, financially independent, being a ‘freelance chemical consultant’, as he liked to describe himself, and, at one time, owner of a gold mine, though this advantage was double-edged. On the one hand, it gave him relative freedom to devote his time as he wished, but on the other, it entailed that it was his own money he was spending. It was not only time that Crookes was investing when investigating mediums.²³ Second, Crookes was professionally independent, operating from his own well-equipped private laboratory, and able to determine the topics and priorities for his scientific investigations, limited only by the demands upon his time and energy of any other projects and commitments he took on. Moreover, he enjoyed a rich array of ‘invisible resources’—friends and family, apprentices and technicians—which amply substituted for formal institutional support (Gay, 1996, p. 312f). Finally, Crookes was institutionally independent, having never attained a position at a university, and so freed from worries about toeing a party line or being subjected to disciplinary procedures (see D’Albe, 1923, p. 28; Gay, 1996). These financial, professional, and institutional factors were distinctive to Crookes and all they affected his ability to cope with and respond to professional and public harms—such as the threat of having one’s funding cut, or being answerable to a University Senate—and are therefore integral to his epistemic courageousness.

More generally, Crookes could exercise epistemic courage because he could trade on his reputation as one of the most

¹⁹ See the useful taxonomy of the six main types of epistemic virtue offered by Baehr (2011, p. 21).

²⁰ See Roberts & Wood (2007, pp. 294–6ff).

²¹ In personal communication, for which I am grateful.

²² See Roberts & Wood (2007, chap. 5).

²³ See, further, Brock (2008, chap. 3).

distinguished British scientists of the Victorian period. With a string of theoretical and practical achievements to his name, including the discovery of thallium and the invention of the radiometer, Crookes had the sort of ‘cultural capital’ to sustain his researches; hence the amusingness of his motto *Ubi Crookes, ibi lux* being wittily modified to *Ubi Crookes, ibi spooks*. Crookes also, of course, edited his own journal, the *Quarterly Journal of Science*, which ‘provided space for papers which other editors would reject’, but also—one might say—a space for the exercise of epistemic courage (Knight, 1996, p. 53). The ‘ability’ to exercise courage which Baehr stresses can take many forms, but ‘spaces’ for the publication of heterodox ideas is one that the history of science offers. All of these contextual factors informed Crookes’ willingness and ability to exercise epistemic courage because they affected his capacity to cope with harms to his well-being by granting him a degree of independence and security denied to many others.²⁴

In fact, a critic might object that these factors actually meant that Crookes risked *less*, rather than *more*, for true courage, so the objection goes, would surely be better credited to a researcher with less wealth, status, and independence. There are two responses to this, the first being that it is overly romantic to confine the possibility of courage to the underdog. To be sure, Crookes enjoyed advantages others lacked, but this affects the practice—but not the possibility—of courage, for his wealth, status and so on shaped his ability to exercise that virtue; just as one can fight courageously with either a slingshot or a sword. The second is that Crookes was not perfectly epistemically courageous, given that he abandoned active research after 1876, and played only a minimal role in the efforts to establish the Society for Psychical Research—unlike, say, Lodge. The fact of Crookes’ financial and institutional advantages does not, therefore, undermine claims on behalf of his epistemic courageousness, even if he was, in practice, only imperfectly courageous—but, of course, perfection ought to be expected only of saints.²⁵

These two morals converge in the point that historical enquiry discloses the motivational complexity and context sensitivity of epistemic virtuousness. Although those factors do not undermine Crookes’ courage—which we should not doubt—they should indicate that accounts of virtues in science must be contextually rich and historically informed as well as philosophically sophisticated; hence the need for an ‘integrated’ approach to the understanding of epistemic virtues in scientific enquiry.

6. The intellectual integrity and public duties of scientists

The final set of remarks that Crookes made about epistemic virtues relate to a complexly related set of issues concerning the connections between personal integrity and intellectual authority in late modern societies. Those remarks can be profitably located within a much larger debate about the ways in which scientific knowledge is produced and legitimated and the identities and virtues of ‘truth-speakers ... in late modernity’ (Shapin, 2008a, p. 6f). This section will firstly consider the role of intellectual integrity and then that of public duties, and then consider Crookes’ account of their convergence.

The idea that certain virtues are distinctive to a scholar is an old one. Johann Gottlieb Fichte argued in his *Lectures on the Vocation of the Scholar* of 1794 that a distinctive quality of the scholar (*Gelehrter*)—or teacher or scientist—is their *truthfulness*,

specifically their becoming, through strenuous moral and intellectual discipline, ‘a priest of truth’ (Fichte, 1988, p. 174f). Such aretaic language is, in fact, an enduring feature of our public vocabulary and of the sorts of epideictic rhetoric used in conjunction with prized scientists and scholars, for instance as illustrated in the *éloges* of the Paris Academy of Sciences.²⁶ But, perhaps oddly, the idea that the identity and authority of the scholar or scientist—or more generally, of the academic—is invested in certain virtues is neglected within contemporary philosophy, with the honourable exception of Bernard Williams, for whom the ‘authority of the academy’ is deeply invested in the commitment by its members to the ‘virtue of truthfulness’ (2002, chap. 1).²⁷

Since such debates about the relationship between virtue, authority, and enquiry is a large one, both historically and philosophically, they are offered here simply as context for a more focused look at Crookes’ own remarks on those themes.

Crookes made consistent remarks about the intellectual integrity of scientists. Throughout his psychical researches he makes remarks about the quality or character of both his allies and his critics, and many of these can be rendered in terms of epistemic virtues and vices. Crookes argued that a scientist should be careful to guard against both individual and group tendencies to conservatism and dogmatism on the grounds that they ‘bring science to a standstill’ (Crookes, 1871b, p. 473). The theoretical agenda of science ought to be determined by testimonial and evidential, rather than by partisan intellectual and ideological motivations, such as the increasingly energetic assertions of the scientific naturalism advocated by the X-Club.²⁸ Crookes also reported himself to be ‘surprised and pained’ by the ‘timidity and apathy’ of many scientists confronted with reports of psychical phenomena, because such qualities—or vices—‘argues ill for the boasted freedom of opinion’ of scientific enquiry (Crookes, 1871a, p. 346). The scientist of integrity will strive to cultivate qualities and virtues—like courage and humility—which are both integral to scientific methodology and to the efforts by scientists to legitimate their claims to cognitive and cultural authority, a concern deeply implicated in longstanding debates about ‘relations ... between the *authority* of knowledge and the *character* of knowers’ (Shapin, 2008a, p. xiv).

Crookes also associated epistemic virtues with the public duties of scientists. It is well-established that he was ‘very much a public-minded scientist’ with a ‘sincer[e] ... belief in the public responsibility of science’, evidenced in his enthusiastic involvement in a wide variety of projects to apply scientific knowledge and techniques to the public good.²⁹ The *Quarterly Journal of Science* emphasized practical topics—like food adulteration and water pollution—where discoveries at the ‘startling new frontiers of science’ could help resolve ‘social problems’, and Crookes perceived spiritualism and psychical research as another instance of social problems requiring resolution by state-of-the-art science (Noakes, 2004, p. 33). But the scientific investigation of spiritualism had for Crookes a further, more specific motivation of a distinctively epistemic character: a desire to serve the epistemic good of the public by protecting them against deception and manipulation.³⁰

²⁶ See Outram (1978) and Paul (1980). I thank Michael Bycroft for a useful discussion of the *éloges*.

²⁷ For a recent defense of the idea that there are ‘professional virtues’ for intellectual disciplines and practices—such as archaeology and teaching—see Cooper (2006, 2008). On epistemic vices and intellectual authority, see Kidd (in press).

²⁸ On the X-Club, see Barton (1990, 1998).

²⁹ Oppenheim (1985, p. 339); see further Brock (2008, chaps. 14–16).

³⁰ On the wider context of such talk of ‘protecting the public’, see Sommer (2013b, chaps. 1 and 4).

²⁴ A useful study of such social factors during the formation of the German ‘Gesellschaft für Psychologische Forschung’ is offered by Sommer (2013a).

²⁵ I thank an anonymous referee for pressing this objection, and for the point about Crookes’ retreat from active research.

Crookes declared that it is ‘the duty of scientific men’ who have ‘learnt exact modes of working’ to ‘examine phenomena which attract the attention of the public’, either to ‘confirm their genuineness, or to explain ... the delusions [and] tricks’ they involve (Crookes, 1870, pp. 316–317). The fulfilment of that ‘duty’ of course requires the exercise of epistemic virtues, like courage, diligence, and impartiality, and other features of ‘exact modes’ of enquiry that Crookes praises. Moreover, the motivations informing those duties are also recognizably reflective of virtues; for instance, the desire to ascertain the ‘genuineness’ of a phenomenon is grounded in virtues like curiosity and truthfulness.³¹

It is for these reasons that Crookes criticized the opponents of psychical research for evincing a ‘curious oblivion’ of the ‘very functions [of] the scientific enquirer’ (Crookes, 1871b, p. 473). There are two aspects of those ‘functions’ that Crookes thought was being threatened by the critics of psychical research. The first is to serve the public good—protecting them from deception; responding to their curiosity and concerns—rather than to pursue private agendas. Many critics of spiritualism professed that same aim, of course, with *The Lancet* stating its desire to guard the public against the ‘moral and intellectual consequences’ it posed, but the epistemic issue was whether scientific investigations ought to honour a ‘spirit of open-minded inquiry’ or press on—prejudicially, to Crookes’ mind—with the view that it was a ‘dangerous delusion ... ultimately beyond the scope of scientific inquiry’ (Owen, 2004, p. 143). The second function, then, was for scientists to engage in open and impartial self-reflexive debate about their own methods and convictions, applying those ‘exact modes’ of thought to their own minds, purifying themselves of ‘unfairness [and] prejudice’ and so granting themselves the ‘capacity to deal with any subject conflicting with [one’s] ... prepossessions’ (Crookes, 1898, p. 46). Such ennobling sentiments of course bring with them high standards, such as resistance of the urge to ‘deny [or] sneer’ at reports of unusual phenomena, but rather to ‘investigate [them] with care and patience’ (Crookes, 1874, p. 23).

These two sets of claims about integrity and public duties arguably converge. The scientist must conduct himself or herself with intellectual integrity, being capable of ‘open-minded inquiry’ and disciplined exactitude rather than ‘timidity’, ‘apathy’, and prejudicial conservatism. And such integrity is essential because it is essential if scientists are to fulfil their duties to further the practical interests and guard the epistemic security of the public against ‘delusions [and] tricks’. The public-minded scientist of integrity is therefore also an epistemically virtuous character: courageous and impartial, open-minded and disciplined, and therefore possessed of the admirable qualities appropriate to their status as the cognitive and cultural authorities in a scientific culture. This virtuous scientist is therefore one suited to ‘lead the public mind up to an appreciation of [spiritualistic and psychical] phenomena’ (Crookes, 1874, p. 81). For as with Fichte’s ‘priest of truth’, the elevated, ‘purified’ intellectual character of the scholar is the basis of a privileged responsibility to guide the rest of us in our understanding of the world and our place within it.

For Crookes, the case of psychical research provided an excellent ‘test case’ for the intellectual integrity and public-mindedness of certain of the members of the late Victorian British scientific establishment. Unfortunately, ‘the scientific elite appeared to be deploying every device against Crookes except that of the mechanisms of impartial, non-authoritarian experiment, as the ideology of scientific naturalism proclaimed’ (Luckhurst, 2002, p. 32).

7. Conclusions

The task of understanding epistemic virtues in scientific enquiry will require an integrated historical and philosophical analysis that brings together historians and philosophers of science and virtue epistemologists. Such integrated studies ought to focus on specific case studies—of the sort offered here—for the reason that such studies indicate the motivational complexity and context sensitivity of the exercise of epistemic virtues. Moreover, a case study like that of Crookes’ spooks helps to align philosophical debates about the epistemic virtues with wider historical questions, such as the place that such virtues had in debate about the professional identity and intellectual authority of scientists in the late Victorian period, and indeed today. Certainly this paper has considered only one virtue and one candidate, but, of course, the history of spiritualistic, psychical, and mediumistic researches offers many opportunities to consider other virtues and other figures. A good starting point might be the early active members of the Society for Psychical Research, including Edmund Gurney (1847–1888), who abandoned his legal studies and promising career as a philosophical writer to devote himself to its activities, in full knowledge of the financial and professional costs of doing so.³² The writings of these and other figures are also replete with appeals to other virtues, such as epistemic humility, and warnings against associated vices, such as dogmatism and arrogance. W. F. Barrett, for example, criticized both the ‘dogmatic refusal to listen to evidence’ of critics of spiritualism, as well as the ‘temper of uncritical acceptance’ on the part of spiritualists themselves (1911, p. 212).

Hopefully this paper will be a spur to further integrated historical and philosophical studies of epistemic virtues in scientific enquiry.

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³¹ See further Baehr (2011, p. 19f) and Roberts & Wood (2008, chap. 6).

³² See Sommer (2013b, §2.2.2) on Gurney and other candidates.

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